

Notice of Allowability

Application No.

10/830,124

Examiner

Wasseem H Hamdan

Applicant(s)

TOKUDA ET AL.

Art Unit

2854

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/21/2004.
2. ☒ The allowed claim(s) is/are 1-25.
3. ☒ The drawings filed on 23 April 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 06/14/04; 04/23/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of species I, claims 1-11 in the reply filed on October 21, 2004 is acknowledged. The examiner found the applicant's argument is persuasive.

Therefore the restriction requirement that mailed on 09/21/2004 has been withdrawn.

Accordingly, all pending claims 1-25 are currently under consideration.

Claims 1-25 distinguish over the prior art of record and thus are allowed.

Examiner's Statement Of Reason For Allowance

2. The following is an examiner's statement of reasons for allowance

Regarding claim 1, the prior art of record does not teach all the combined elements and components for an image processing system including an embedding processing unit which creates composite image information by embedding sub-information in main image information in an invisible state using the main image information, the sub-information, and key information used to restore the sub-information, and

a frequency component extracting unit which extracts a spatial frequency component unique to the key information from the composite image information input by the image input unit, and a reconstructing unit which reconstructs the sub-information from the spatial frequency component extracted by the frequency component extracting unit.

Regarding claim 2, the prior art of record does not teach all the combined elements and components for an image processing system including an embedding processing unit which creates composite image information by embedding sub-information in main image information

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in an invisible state using the main image information, the sub-information, and key information used to restore the sub-information,

a frequency component extracting unit which extracts a spatial frequency component unique to the key information from the composite image information input by the image input unit, and a reconstructing unit which reconstructs the sub-information from the spatial frequency component extracted by the frequency component extracting unit.

Regarding claim 8, the prior art of record does not teach all the combined elements and components for an image processing apparatus including a frequency component extracting unit which extracts a spatial frequency component unique to the key information from the composite image information input by the image input unit; and

a reconstructing unit which reconstructs the sub-information from the spatial frequency component extracted by the frequency component extracting unit.

Regarding claim 12, the prior art of record does not teach all the combined elements and components for an image processing apparatus including a frequency component extracting unit which extracts a spatial frequency component unique to the key information from the color component extracted by the color component extracting unit; and

a reconstructing unit which reconstructs the sub-information from the spatial frequency component extracted by the frequency component extracting unit.

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Regarding claim 15, the prior art of record does not teach all the combined elements and components for an image processing apparatus including a frequency component extracting unit which extracts a spatial frequency component unique to the key information from the color component composite image information created by the color combining unit; and

a reconstructing unit which reconstructs the sub-information from the spatial frequency component extracted by the frequency component extracting unit.

Regarding claim 16, the prior art of record does not teach all the combined elements and components for an image processing apparatus including a reconstruction parameter determining unit which determines a reconstruction parameter on the basis of the color feature extracted by the color feature extracting unit;

a frequency component extracting unit which extracts a spatial frequency component unique to the key information from the composite image information input by the image input unit; and

a reconstructing unit which reconstructs the sub-information from the spatial frequency component extracted by the frequency component extracting unit by using the reconstruction parameter determined by the reconstruction parameter determining unit.

Regarding claim 19, the prior art of record does not teach all the combined steps for a method of an image processing method including the steps of extracting a spatial frequency component unique to the key information from the composite image information input from the

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recording medium; and reconstructing the sub-information from the spatial frequency component extracted by extracting the frequency component.

Regarding claim 23, the prior art of record does not teach all the combined steps for a method of an image processing method including the steps of extracting a color component from the composite image information input from the recording medium on the basis of the color component information stored in a color component information storage unit extracting a spatial frequency component unique to the key information from the extracted color component; and reconstructing the sub-information from the extracted spatial frequency component.

Regarding claim 24, the prior art of record does not teach all the combined steps for a method of an image processing method including the steps of extracting a color feature in a local area extracted the composite image information from the local area; creating color component composite image information by combining color components on the basis of the color feature extracted from the local area; extracting a spatial frequency component unique to the key information from the created color component composite image information; and reconstructing the sub-information from the extracted spatial frequency component.

Regarding claim 25, the prior art of record does not teach all the combined steps for a method of an image processing method including the steps of extracting a color feature in the extracted local area from the local area; determining a reconstruction parameter on the basis of the color feature extracted from the local area; extracting a spatial frequency component unique

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to the key information from the composite image information input from the recording medium; and reconstructing the sub-information from the spatial frequency component extracted by extracting the frequency component by using the reconstruction parameter determined on the basis of the color feature.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art of record does not teach all the combined elements, components and the steps as discussed above in the "examiner's statement of reasons for allowance".

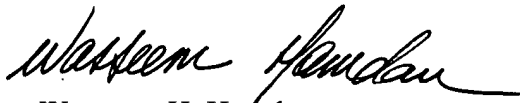
4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wasseem H Hamdan whose telephone number is (571) 272-2166. The examiner can normally be reached on M-F (first Friday off) 6:30 AM- 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew H Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

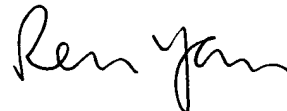
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Wasseem H. Hamdan

November 23, 2004



REN YAN
PRIMARY EXAMINER